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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,979	07/11/2003	Takashi Nakamura	240263US2	2874

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C. IRVIN MCCLELLAND
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SHENG, TOM V

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/616,979	Applicant(s) NAKAMURA ET AL.	
	Examiner Tom V. Sheng	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/10/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 and 25 is/are allowed.
- 6) ☒ Claim(s) 26 is/are rejected.
- 7) ☒ Claim(s) 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa et al. (US 6,243,069 B1), hereinafter Ogawa.

As for claim 26, Ogawa teaches a display device (fig. 2), comprising:

display elements (pixels 110) formed in vicinity of intersections (as shown) of signal lines (source lines 22) and scan lines (gate lines 23) aligned vertically and horizontally (orthogonal to each others; column 11, lines 4-10);

sensors (photodiodes 25) provided corresponding to said display elements (each pixel includes both LC 14 as display element and a corresponding photodiode 25 as sensing element), each picking up an image (column 11, lines 11-30);

A/D converters (A/D converter 36a) which convert output signals of said sensors into digital signals (connect to source lines 22 and output read picture data; column 12, lines 5-21); and

a serial output part (line memory 36b) which converts said digital signals into a serial signal to output the serial signal (holds picture data of each line and outputs

sequentially, according to timing signals from shift register 34; column 12, lines 22-26).
See the serial output at the right end of line memory 36b.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Street et al. (US 6,940,142 B2), hereinafter Street.

As for claim 26, Street teaches a display device (fig. 1), comprising:

display elements (pixels 110) formed in vicinity of intersections (as shown) of signal lines (data lines 130) and scan lines (gate lines 125) aligned vertically and horizontally (as shown);

sensors (sensors 112) provided corresponding to said display elements (each pixel includes a sensor 112), each picking up an image (inherent of image sensor). See column 3, lines 46-62.

Street further teaches that each row of image signals would be serialized by multiplexer 140 and then converted to digital signals by digitizer 150 (column 3, lines 59-62). Street's multiplexer 140 corresponds to a parallel-to-serial converter and digitizer 150 corresponds to an analog-to-digital converter. However, the order in arrangement of the multiplexer and the digitizer is just the opposite of the Applicant's

invention. Thus, Street does not teach the limitations, "A/D converters which convert output signals of said sensors into digital signals; and a serial output part which converts said digital signals into a serial signal to output the serial signal."

However, the Applicant has not provided any unique advantage or particular purpose of his arrangement over the one of Street. Accordingly, the two arrangements are functionally equivalent. Moreover, a change in location is generally recognized as being within the level of ordinary skill in the art, see **In re Japikse, 86 USPQ 70 (CCPA 1950)**. Therefore, it would have been obvious for one of ordinary skill in the art to modify the order and details of Street's multiplexer 140 and digitizer 150 to be as claimed, as a design choice due to the functional equivalence by either ways.

Allowable Subject Matter

5. Claims 24 and 25 are allowed.
6. Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts of record teaches the limitations, "wherein said shift register has: a first shift register which converts said digital signal of m (m is an integer equal to or more than 2) bits into a first serial signal and outputs the first serial signal; a second shift register which converts said digital signal of n (n is an integer equal to or more than 2) bits into a second serial signal and outputs the second serial signal; and a

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serial signal selector which selects either of said first or second serial signal and outputs the selected signal” of claim 24; “a plurality of shift registers formed on said insulation substrate which convert said digital signals into a plurality of first serial signals and output said first serial signals; and a serial signal selector formed on said insulation substrate which selects one of said plurality of first serial signals outputted from said plurality of first shift registers and outputs the selected signal” of claim 25; and “wherein said serial output part includes: a first shift register which converts said digital signal of m (m is an integer equal to or more than 2) bits into a first serial signal and outputs the first serial signal; a second shift register which converts said digital signal of n (n is an integer equal to or more than 2) bits into a second serial signal and outputs the second serial signal; and a serial signal selector which selects either of said first or second serial signal and outputs the selected signal” of claim 27.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng
September 23, 2006

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

